

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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MARY K. JONES, Individually and on Behalf	:	Civil Action No. 1:10-cv-03864-AKH
of All Others Similarly Situated,	:	
	:	<u>CLASS ACTION</u>
Plaintiff	:	
	:	DECLARATION OF STEVEN P.
vs.	:	FEINSTEIN, PH.D., CFA IN SUPPORT OF
	:	PLAINTIFFS' MOTION FOR CLASS
PFIZER INC., et al.,	:	CERTIFICATION
	:	
Defendants.	:	
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SCOPE OF ASSIGNMENT

1. I was asked by Robbins Geller Rudman & Dowd LLP, counsel for the Lead Plaintiff, to determine whether the common stock of Pfizer Inc. (“Pfizer” or the “Company”) traded in an efficient market during the Class Period, 19 January 2006 to 23 January 2009.
2. Toward this end, I analyzed the market for Pfizer stock and its price behavior, focusing on the factors that are generally accepted to be indicative of market efficiency for publicly traded securities. I examined Company press releases, conference call transcripts, equity analyst reports, news articles, SEC filings, the security prices, trading volume, performance of the overall market, and performance of Pfizer’s peers, as well as other pertinent data and documents. I also reviewed the First Amended Consolidated Class Action Complaint for Violations of the Federal Securities Laws. This report presents my methodology, findings, and conclusions.

CREDENTIALS

3. I, Steven P. Feinstein, am an Associate Professor of Finance at Babson College, and the President of Crowninshield Financial Research, Inc., a financial economics consulting firm.
4. I hold a Ph.D. in Economics from Yale University, a Master of Philosophy degree in Economics from Yale University, a Master of Arts in Economics from Yale University, and a Bachelor of Arts degree in Economics from Pomona College. I also hold the Chartered Financial Analyst (“CFA”) designation granted by the CFA Institute.
5. My teaching experience, a list of my publications, and other credentials are listed in my curriculum vitae, which is attached as Exhibit-1.

CONCLUSIONS

6. Pfizer common stock traded in an efficient market over the course of the Class Period. Pfizer common stock satisfied factors that are indicative of market efficiency, which, consistent with financial economic principles and empirical research, indicate market efficiency.

7. Statistical tests prove that there was a cause-and-effect relationship between the release of new material information and movements in Pfizer's common stock price, which not only indicates market efficiency, but demonstrates the essence of market efficiency.

INDICIA OF MARKET EFFICIENCY

8. In order to assess the efficiency of the market for Pfizer common stock, I analyzed eight factors that are generally considered to be indicia of market efficiency for a publicly traded stock. These factors include: 1) trading volume, 2) coverage by securities analysts, 3) number of market makers, 4) eligibility for S-3 registration, 5) the company's market capitalization, 6) the stock's float, 7) the typical bid-ask spread, and 8) empirical evidence that indicates whether the security price reacts to new material information.

1) Trading Volume

9. Throughout the Class Period, Pfizer common stock traded regularly and actively. On average, 40.2 million shares changed hands daily.¹ On one day during the Class Period, 4 December 2007, over 1.2 billion shares traded. During the Class Period, the average weekly trading volume was 2.9% of shares outstanding.²
10. Both in terms of average daily trading volume and of the percentage of outstanding shares traded weekly, the market for Pfizer common stock was very active, evidencing market efficiency.

2) Coverage by Securities Analysts

11. Pfizer was the subject of broad analyst coverage throughout the Class Period. The Thomson Research database provides analyst reports on Pfizer published during that time by 16 different firms: A.G. Edwards, Bear Stearns, Bernstein Research, Buckingham Research, CSFB, Davenport and Co., Deutsche Bank, Hilliard Lyons, HSBC, J.P. Morgan, Morgan Stanley, Natexis Bleichroeder, Oppenheimer, Prudential, S.G. Cowen, and Sun Trust Robinson Humphrey. The Thomson Research database, which is not a

¹ All securities pricing and volume data were provided by CRSP (the Center for Research in Securities Prices).

² Calculated by dividing the average daily volume by the average number of shares outstanding, times 5 (the number of trading days in a typical week).

comprehensive collection of all analysts issuing research reports, reflected 580 analyst reports on Pfizer during the Class Period.

12. In addition, transcripts from Pfizer's conference calls during the Class Period indicate that analysts covered Pfizer for the following 12 additional firms: Banc of America, Barclays, BMO Capital Markets, Citigroup, Friedman Billings Ramsey, Goldman Sachs, Lehman Brothers, Leerink Swann, Merrill Lynch, Raymond James, Summer Street Research, and UBS.³
13. Furthermore, large institutions, which employ their own securities analysts, also owned shares of Pfizer stock. For each quarter during the Class Period, the average number of institutions holding shares of Pfizer stock was 1,527.⁴ Average institutional holdings during the Class Period were 5.7 billion shares, or 81.6% of Pfizer's total shares outstanding.
14. The widespread analyst coverage of Pfizer and institutional ownership is evidence of the efficiency of the market for Pfizer common stock during the Class Period.

3) Number of Market Makers

15. The NYSE is one of the most renowned, most liquid, and most efficient forums for trading stocks in the world. Stocks on the NYSE are traded under the supervision of a lead market maker known as a "specialist." Specialists are responsible for maintaining a fair and orderly market for the security to which they are assigned.⁵
16. While specialists are the most important market makers for NYSE stocks, they are not the only market makers. Generally, numerous brokers and dealers also make markets in NYSE-listed stocks, and the NYSE specialist facilitates their market making activity.
17. During the Class Period, according to Bloomberg, there were at least 722 market makers for Pfizer common stock, including: Banc of America; Barclays Capital; Citigroup;

³ Pfizer Conference Call Transcripts, *Thomson StreetEvents*, 19 January 2006, 19 April 2006, 17 July 2006, 20 July 2006, 19 October 2006, 20 April 2007, 18 July 2007, 18 October 2007, 23 January 2008, 17 April 2008, 18 June 2008, 23 July 2008, and 21 October 2008.

⁴ Institutional holdings data is obtained from Vickers Stock Research.

⁵ "Organization and Functioning of Securities Markets," by Frank Reilly and Keith Brown, in *Equity and Fixed Income CFA Program Curriculum*, vol. 5, Pearson Custom Publishing, 2008.

Goldman Sachs; J.P. Morgan Securities; Jefferies & Co.; Merrill Lynch; RBC Capital Markets; UBS Securities; and Wells Fargo.⁶

18. The facts that Pfizer common stock traded on the NYSE and that numerous financial institutions also served as market makers are strong evidence that Pfizer common stock traded in an efficient market.

4) Eligibility for S-3 Registration

19. In order to achieve eligibility for S-3 registration, a company must have filed financial reports with the SEC for 12 months and have \$75 million of float (the number of shares outstanding that are available for trading). Satisfying such conditions on filings and float indicates that the subject company would be well known in the marketplace and information about it would be readily available, fostering the efficiency of the market for the company's stock.
20. I computed Pfizer's common stock float using data in Pfizer's SEC filings and common stock price data provided by CRSP.⁷ During the Class Period, Pfizer's float ranged between \$97.4 billion and \$207.4 billion, with a daily average of \$163.7 billion, satisfying the requirement for S-3 registrations.
21. Moreover, the Company had been filing financial reports with the SEC for many years prior to the Class Period and remained current throughout the Class Period. In fact, Pfizer filed an S-3 registration for 20,000,000 shares of stock on 28 February 2007.⁸
22. Pfizer's eligibility and filing of an S-3 registration are evidence of the efficiency of the market for Pfizer common stock during the Class Period.

5) The Company's Market Capitalization

23. During the Class Period, Pfizer's market capitalization averaged \$163.8 billion, putting Pfizer among the largest publicly traded companies in the world. Pfizer's large market

⁶ This information was derived using the following commands on Bloomberg: PFE Equity MKAC.

⁷ Float value is based on closing prices provided by CRSP. Share data is obtained from SEC filings. According to Proxy Statements filed 27 June 2005, 5 April 2006, 6 April 2007, and 4 April 2008, insiders held 464,187,623, 450,769,470, 361,501,411, and 362,255,603 shares as of 27 June 2005, 5 April 2006, 6 April 2007, and 4 April 2008, respectively.

⁸ Pfizer Inc. Form S-3, dated 28 February 2007.

capitalization is further evidence of the efficiency of the market for Pfizer stock. During the Class Period, Pfizer was one of the largest 20 companies in the U.S.⁹

6) The Stock's Float

24. Nearly all of Pfizer's shares outstanding were available to trade, with float averaging 99.9% of shares outstanding during the Class Period.¹⁰ The high ratio of float to outstanding shares is an indicator of market efficiency for Pfizer stock.

7) The Typical Bid-Ask Spread

25. The average bid-ask spread for Pfizer stock over the course of the Class Period was 0.08%, or, in dollar terms, \$0.02 per share. By comparison, the average month-end bid-ask spread over the course of the Class Period for all stocks in the CRSP database was 1.02% or \$0.15 per share.
26. In both percent and dollar terms, Pfizer's bid-ask spread was well below the market average, indicating market efficiency for Pfizer stock.

8) Empirical Evidence That The Security Price Reacts To New Material Information

27. I conducted an event study, an empirical test, to analyze the efficiency of the market for Pfizer common stock. The results of the event study indicate that throughout the Class Period Pfizer stock responded to the release of new material information. This consistent cause-and-effect relationship is evidence of market efficiency for Pfizer stock.
28. By reviewing Pfizer's Form 8-Ks during the Class Period, I identified 18 potential event dates that clearly reflected the release of new financial information.¹¹ I eliminated those event dates where the mix of new information was not clearly positive or negative. In total, I included 9 events in the event study: 19 January 2006, 10 February 2006, 26 June 2006, 20 July 2006, 2 August 2006, 30 November 2006, 4 December 2006, 23 January 2008, and 18 June 2008.

⁹ "Table of 20 Largest U.S. Cos. By Market Capitalization," *Dow Jones Newswires*, 20 January 2006.

¹⁰ Based on shares outstanding and insider ownership reported in Pfizer's SEC filings.

¹¹ I eliminated all 8-Ks that discussed employment issues, such as new executive contracts or additions/resignations from Pfizer's Board of Directors, because those were not likely to cause movements in the price of Pfizer stock. I also eliminated 8-Ks that were essentially reiterations of previously announced information, because only new information would be expected to cause movements in Pfizer stock.

29. The following are examples of the event dates that I included in the event study:
- i. 2 August 2006 – During trading that day, a U.S. appeals court upheld one of two patents for Lipitor, ensuring market exclusivity through March 2010, but reversed the lower court’s ruling that upheld a second patent, which would have allowed for exclusivity through June 2011. Analysts noted that exclusivity through March 2010, rather than June 2011, would negatively impact Pfizer’s earnings.¹²
 - ii. 4 December 2006 – On Saturday, 2 December 2006, Pfizer stopped development of torcetrapib, after an independent safety board recommended that it end a clinical trial because of cardiovascular events and deaths. Torcetrapib had been viewed as the best drug in Pfizer’s pipeline and was expected to help deal with the loss of patent protection for its top selling drug, Lipitor.¹³
 - iii. 23 January 2008 – Prior to the start of trading that day, Pfizer announced earnings of \$0.52 per share for the fourth quarter of 2007 (excluding certain items), above the consensus estimate of \$0.47. In addition, Pfizer raised the low end of 2008 EPS guidance to \$2.35, above the consensus estimate of \$2.34, and the revenue guidance by \$0.5 billion.¹⁴
30. In order to estimate Pfizer stock’s returns that were expected to occur absent the new Company-specific information released on the event dates, I ran a regression modeling the return of Pfizer common stock as a function of: 1) a constant term, 2) the returns of the overall stock market, and 3) a peer group index return. I ran the regression on daily logarithmic returns covering the entire Class Period, using dummy variables to control for potentially abnormal returns on the dates being tested in the event study.¹⁵ The regression results are presented in Exhibit-2

¹² “Pfizer Wins US Appeals Court Ruling For Lipitor Patent,” by Peter Loftus, *Dow Jones Newswires*, 2 August 2006, and “UPDATE 6-US Court Ruling Threatens Lipitor Patent Life,” by Peter Kaplan and Ransdell Pierson, *Reuters News*, 2 August 2006.

¹³ REFILE-UPDATE 2-Pfizer Ends Development Of Key Cholesterol Dr,” by Edward Tobin, *Reuters News*, 3 December 2006, and “BEFORE THE BELL: Pfizer Shares Drop On Heart Drug Setback,” by Christopher Hungon, *Dow Jones Newswires*, 4 December 2006.

¹⁴ “Pfizer Raises Its 2008 Revenue Outlook After 4Q Profit Falls But Beats Street Expectations,” by Damian Troise, *Associated Press Newswires*, 23 January 2008.

¹⁵ The Appendix presents the mathematical formula for the logarithmic return and a discussion of the measure.

31. For each of the event dates, I conducted a *t*-test to determine whether the residual return of Pfizer stock indicated by the regression model (Pfizer's actual return after controlling for market and sector effects) was statistically significant. The results of the event study are presented in Exhibit-3.
32. The stock price movements following 6 of the 9 events, including the three described in paragraph 29 above, were statistically significant at the 95% confidence level, meaning the likelihood of those stock movements having been caused by random chance alone is less than 5%. Further, the stock price movements on 8 of the 9 events were statistically significant at confidence levels of at least 90%. It is important to note that because of the high threshold for statistical significance and as a result of Pfizer's large market capitalization throughout the Class Period, new information could also be economically significant without being statistically significant. Consequently, with a high degree of statistical certainty, I conclude that Pfizer's stock price reacted to the release of new material information.

SUMMARY

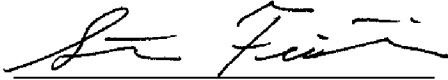
33. Throughout the Class Period Pfizer common stock had: 1) high trading volume, 2) thorough coverage by securities analysts, 3) traded on the NYSE and numerous market makers, 4) eligibility for S-3 registration, 5) a large market capitalization, 6) a large float relative to total shares outstanding, and 7) a low bid-ask spread.
34. Not only did Pfizer stock exhibit these seven factors that indicate market efficiency, but as demonstrated by the event study analysis, it also consistently satisfied the empirical factor, which demonstrates the essence of market efficiency.
35. Given these facts, I conclude that Pfizer common stock traded in an efficient market over the course of the Class Period.

LIMITING FACTORS AND OTHER ASSUMPTIONS

36. This declaration is furnished solely for the purpose of court proceedings in the above named matter and may not be used or referred to for any other purpose. The analysis and opinions contained in this report are based on information available as of the date of this

report. I reserve the right to supplement or amend this report, including in the event additional information becomes available.

I swear under penalty of perjury that the above is true and correct. Executed 13 January 2012 at Wellesley, Massachusetts.

A handwritten signature in black ink, appearing to read "Steven P. Feinstein", written over a horizontal line.

Steven P. Feinstein, Ph.D., CFA

APPENDIX: LOGARITHMIC RETURNS USED IN REGRESSION MODELING

Logarithmic returns, rather than percent change returns are commonly used in stock return regressions and event study analysis and were used in the regression modeling here. The formula for a logarithmic return is:

$$R_t = \ln \left(\frac{P_t + d_t}{P_{t-1}} \right)$$

where:

- R_t is the logarithmic return on day t ;
- P_t is the stock price at the end of day t ;
- P_{t-1} is the stock price from the previous day, day $t-1$;
- d_t is the dividend on day t , if any.

The formula for converting a logarithmic return into a dollar return is:

$$DR_t = P_{t-1} \cdot (e^{R_t} - 1)$$

where:

- DR_t is the dollar return on day t ;
- P_{t-1} is the stock price from the previous day, day $t-1$;
- e is natural e (approximately 2.7);
- R_t is the logarithmic return on day t .

If a stock falls from \$20 to \$18, the percent change in price is -10%, equal to the \$2 decline divided by the original \$20 price. The logarithmic return, however, is -10.54%, equal to $\ln(\$18/\$20)$.

The logarithmic return relates a price change to an average of the original, final, and intervening prices over the course of a price decline. As such, for large price declines, it is possible for a logarithmic price decline to exceed 100%, since the price decline may be greater than the average of the beginning and ending prices.

An attractive feature of a logarithmic return is that it can be decomposed into contributing factors linearly. That is, the portion of a logarithmic return caused by company-specific information is isolated by subtracting from the total logarithmic return the portion of the total return caused by market and peer group factors.

CERTIFICATE OF SERVICE

I hereby certify that on January 13, 2012, I authorized the electronic filing of the foregoing with the Clerk of the Court using the CM/ECF system which will send notification of such filing to the e-mail addresses denoted on the attached Electronic Mail Notice List, and I hereby certify that I caused to be mailed the foregoing document or paper via the United States Postal Service to the non-CM/ECF participants indicated on the attached Manual Notice List.

I certify under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed on January 13, 2012.

s/ WILLOW E. RADCLIFFE
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